

CLAIMS

What is claimed is:

1. A method for designing an integrated circuit, comprising:
manipulating representations of components of an integrated circuit on a display device by a user;
specifying an interconnect having a characteristic between a first represented component and a second represented component; and
extracting data suitable for describing the specified interconnect between the first represented component and the second represented component.
2. The method as described in claim 1, wherein at least one of the first component and the second component includes at least one of a cell, block and core.
3. The method as described in claim 1, wherein the extracted data is programmed into a self-programmable integrated circuit so as to provide the specified interconnect.
4. The method as described in claim 1, wherein the extracted data is utilized to synthesize an integrated circuit having the specified interconnect.
5. The method as described in claim 1, wherein the extracted data includes a direct connectivity definition.
6. The method as described in claim 1, wherein the extracted data is formatted in a hardware description language.
7. The method as described in claim 1, wherein the specified characteristic includes at least one of bandwidth, latency and scalability.

8. The method as described in claim 1, further comprising optimizing at least one of the components and interconnects.
9. The method as described in claim 8, wherein optimizing includes at least one of arranging components of the integrated circuit and specifying bandwidth between components.
10. The method as described in claim 9, wherein components are arranged based on latency, scalability, timing considerations, power considerations, data switching and bandwidth.
11. The method as described in claim 8, wherein optimizing is performed without user intervention by an agent.
12. The method as described in claim 1, wherein the integrated circuit is at least one of an application specific integrated circuit (ASIC) and multiple application specific integrated circuits.
13. The method as described in claim 1, wherein components include standardized interfaces.
14. The method as described in claim 13, wherein the standardized interfaces communicate over an interscalabe, isochronous interconnect glue logic.
15. The method as described in claim 1, wherein interconnects not specified by a user are automatically configured by an agent

16. A system for designing an integrated circuit, comprising:
a display device, the display device suitable for displaying representations of components of an integrated circuit for manipulation by a user;
a memory suitable for storing a program of instructions; and
a processor suitable for performing the program of instructions, the processor communicatively coupled to the display device and the memory, wherein the program of instructions configures the processor to
display representations of components of an integrated circuit for manipulation by a user on the display device so that a user may specify an interconnect having a characteristic between a first component representation and a second component representation, and
extract data describing the first represented component, the second represented component and the specified interconnect as manipulated by the user.
17. The system as described in claim 16, wherein the specified characteristic includes at least one of bandwidth, scalability and latency.
18. The system as described in claim 17, wherein bandwidth is specified including at least one of number of links and speed of links.
19. The system as described in claim 16, wherein at least one of the first component and the second component includes at least one of a cell, block and core.
20. The system as described in claim 16, wherein the extracted data is programmed into a self-programmable integrated circuit so as to provide the specified interconnect.

21. The system as described in claim 16, wherein the extracted data is utilized to synthesize an integrated circuit having the specified interconnect.
22. The system as described in claim 16, wherein interconnects not specified by a user are automatically configured by an agent.

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23. A system for designing an integrated circuit, comprising:
 - a display device, the display device suitable for displaying representations of components of an integrated circuit for manipulation by a user;
 - a memory suitable for storing a program of instructions;
 - a processor suitable for performing the program of instructions, the processor communicatively coupled to the display device and the memory, wherein the program of instructions configures the processor to
 - display representations of components of an integrated circuit for manipulation by a user on the display device so that a user may specify an interconnect having a characteristic between a first component representation and a second component representation; and
 - extract data describing the first represented component, the second represented component and the specified interconnect as manipulated by the user;
 - and
 - an integrated circuit communicatively coupled to the processor, wherein the integrated circuit receives the extracted data, wherein the extracted data is utilized by the integrated circuit for being programmed to include the interconnect having the characteristic between a first component corresponding to the first component representation and a second component corresponding to the second component representation.
24. The method as described in claim 23, wherein the specified characteristic includes at least one of bandwidth, latency and scalability.
25. The method as described in claim 24, wherein bandwidth is specified including at least one of number of links and speed of links.

26. The method as described in claim 23, wherein at least one of the first component and the second component includes at least one of a core, functional block and logical block.
27. The method as described in claim 23, wherein the extracted data is utilized to synthesize an integrated circuit having the specified interconnect.
28. The system as described in claim 23, wherein interconnects not specified by a user are automatically configured by an agent.

29. An application specific integrated circuit, comprising:
 - a first component suitable for providing an integrated circuit function, the first component communicatively coupled to a first interface device;
 - a second component suitable for providing an integrated circuit function, the second component communicatively coupled to a second interface device;
 - an interconnect suitable for communicatively coupling the first interface device with the second interface device so as to enable communication of the first component with the second component;
 - a memory suitable for storing a program of instructions, the program of instructions including data received for configuring an interconnect having a characteristic between components of an application specific integrated circuit; and
 - a processor suitable for performing the program of instructions, the processor communicatively coupled to the memory, wherein the program of instructions configures the processor to configure the first component, the second component, and the interconnect to correspond to an interconnect having the characteristic as indicated by the program of instructions.
30. The application specific integrated circuit as described in claim 29, wherein the components include at least one of a cell, block and core.
31. The application specific integrated circuit as described in claim 29, wherein the interconnect is interscalable.
32. The application specific integrated circuit as described in claim 29, wherein the processor is suitable for self-programming to enable optimization of the ASIC.
33. The application specific integrated circuit as described in claim 32, wherein optimization includes routing of packeted data.

34. The application specific integrated circuit as described in claim 29, wherein packeted data is routed based on at least one of an indicated priority of data, component resource availability, priority of data when compared through use of heuristic data and data characteristic.
35. The application specific integrated circuit as described in claim 34, wherein the data characteristic includes streaming data and electronic storage device data.
36. The application specific integrated circuit as described in claim 34, wherein component resource availability is determined by at least one of an amount of data previously transferred to a component, amount of data received from the component, characteristic of data sent to the component and characteristic of data received from the component.